

Collembola from Colorado¹

By HAROLD GEORGE SCOTT²

During recent systematic and distributional studies of the Collembola of New Mexico, seven collections were made in Colorado. These collections yielded one species new to science, one not previously recorded, and two already known from Colorado. All four are representatives of the Suborder Arthropleona, Family Entomobryidae. Most workers on the Collembola have not reported field data, so the ecological information presented is among the first to be published on these species. Collections were made by C. Clayton Hoff and Dwain R. Par-rack,³ Department of Biology, University of New Mexico, in connection with a study of the altitudinal distribution of insect and arachnid groups being directed by Dr. Hoff. The field work was aided by National Science Foundation Grant G-112. Specimens will be deposited at the Academy of Natural Sciences, Philadelphia, Pennsylvania.

Subfamily ISOTOMINAE Schaffer, 1896

Genus *Proisotoma* Börner, 1901

Proisotoma subsegmenta, sp. nov. Figure 1

TYPE COLLECTION. Sifted from aspen litter, 9,200 feet, south of Cumbres Pass, $\frac{1}{4}$ mile north of the New Mexico state line, Conejos County, COLORADO, 3 September 1952.

DESCRIPTION. Body elongate, not subglobose; segmentation distinct, without ankylosis; unique subsection between Abd II and Abd III; integument smooth; white marked evenly with blue; clothing of long and short setae; head prognathous; ratio

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² Training Branch, Communicable Disease Center, Bureau of State Services, Public Health Service, Department of Health, Education, and Welfare, Atlanta, Georgia.

³ Present address: Zoology Department, University of Illinois, Urbana, Illinois.

of antenna to head as 4:3; antenna with five segments, ratio of antennal segments 4:4:4:3:4; postantennal organ of the simple isotomine type; eyes 8 and 8; eyepatches dark; mouthparts chewing; ratio of body segments approximately 10:40:35/20:25:(10):20:35:15:20; tibiotarsus with indistinct distal subsegment; ratio of unguiculus to unguis 3:4; tenent hairs absent; unguis and unguiculus without teeth; furcula reaching far beyond colophore, exceedingly slender; ratio of manubrium to dens to mucro as 10:40:1; dental spines absent; dentes dorsally crenulate; mucro with three teeth, non-lamellate; anus terminal; anal spines absent; length 1.0 mm.

DISCUSSION. This species is extremely unusual. It is the only known Collembola exhibiting more than six abdominal segments and the only known Isotominae with more than four antennal segments. Its furcula is remarkably long, reaching beyond the base of the head. It is suggested that the third abdominal section is not a true segment, but a subsegment of either the second or apparent fourth. This species was not taken in 41 samples from aspen in New Mexico.

Subfamily TOMOCERINAE Schaffer, 1896

Genus *Tomocerus* Nicolet, 1841

Subgenus *Pogonognathellus* Paclt, 1944

***Tomocerus (Pogonognathellus) flavescens* (Tullberg, 1871)**

DIAGNOSTIC CHARACTERISTICS. Postantennal organ absent; eyes 6 and 6; prostheca present; antenna shorter than body; unguis with 2-5 teeth; unguiculus with 0-1 teeth; tenent hairs 1; dental formula 0-II/4-9,11; length 5 mm.

NEW COLORADO RECORDS. From fir stump in woods, 10,000 feet; and from sifting woody debris of fir log, 10,000 feet, Cumbres Pass, Conejos County, 3 September 1952.

RECORDED DISTRIBUTION. Alaska, Cal., Colo., D. C., Ga., Ill., Ind., Iowa, La., Me., Md., Mass., Mich., Minn., Miss., Mo., N. H., N. J., N. M., N. Y., N. C., Ohio, Ore., Penna., Tenn., Tex., Utah, Va., Wash. Also Northwest Territories (Canada),

Europe, and Asia. This species was recorded from Colorado by Mills (1934, p. 83).

Subfamily ENTOMOBRYINAE Schaffer, 1896

Genus *Entomobrya* Rondani, 1861

***Entomobrya purpurascens* (Packard, 1873)**

DIAGNOSTIC CHARACTERISTICS. Tibiotarsus with two rows of smooth hairs on inner surface; purplish to blue to tan to brown with varying amounts of yellow in different individuals; posterior parts of segments usually darker than anterior margins; antenna purplish, paler apically; legs and furcula usually dark.

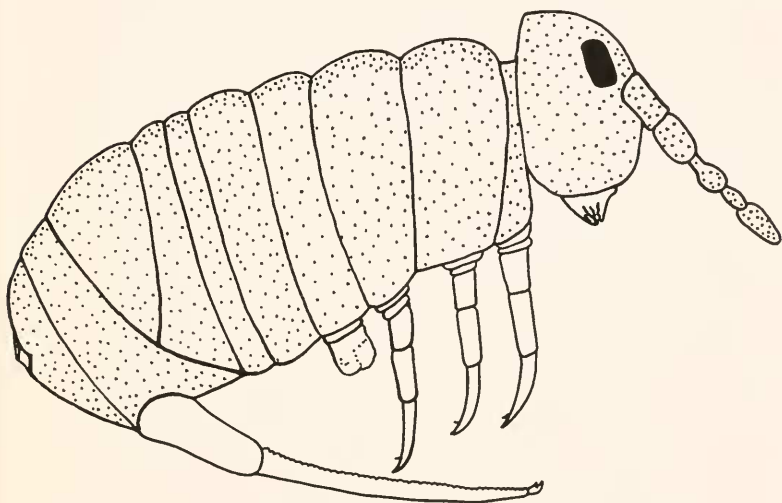


FIG. 1. *Proisotoma subsegmenta* sp. nov., lateral view of holotype.

COLORADO RECORDS. From beneath dung in open area of fir forest, 10,000 feet, at Cumbres Pass; and from old fir log, from beneath small log, and from beneath piece of wood, aspen grove, 9,200 feet, 5 miles south of Cumbres Pass, Conejos County, 3 September 1952.

RECORDED DISTRIBUTION. Colo., Del., Ill., Iowa, La., Me., Md., Mass., Minn., N. H., N. J., N. Y., N. D., Penna., Tenn., Tex., Utah, and Wisc. Also Ontario (Canada), and Europe. This species is recorded from Colorado by Christiansen (1958) as *Entomobryoides guthriei*.

Entomobrya marginata (Tullberg, 1871)

DIAGNOSTIC CHARACTERISTICS. Tibiotarsus without two rows of smooth hairs on inner surface; body essentially unicolorous without well-developed spots or stripes; not conspicuously clothed with dense dark-brown setae; gray to live-green to bluish purple.

COLORADO RECORDS. From sifting aspen litter, 9,200 feet, south of Cumbres Pass, north of New Mexico state line, Conejos County, 3 September 1952.

RECORDED DISTRIBUTION. Colo., Ill., Iowa, Mass., N. Y., Ohio, Tenn., Utah, Wash. Also Ontario (Canada), Europe, and Australasia. This species has not been recorded previously from Colorado.

SUMMARY

Four species of Collembola are recorded from Conejos County, Colorado: *Proisotoma subsegmenta* sp. nov., *Tomocerus flavescens*, *Entomobrya purpurascens*, and *Entomobrya marginata*. *Proisotoma subsegmenta* and *Entomobrya marginata* are new records for the state. The ecological information presented is among the first to be published on these species.

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